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A DOCUMENTATION - ORIENTED SPECIAL TECHNICAL JOURNAL

Gilbert S. Bahn

Editor, Pyrodynamics, a Gordon and Breach Publication,  
Pacific Palisades California

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Gilbert S. Bahn

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ABSTRACT

A special technical journal, in the area of applied thermal processes, began publication in 1964 with a strong orientation toward documentation. The majority of the papers published to date have been carefully sought out as valuable technical society preprints which were not destined for publication in society journals of broad and huge audiences. Tentative conclusions are drawn as to the availability of such preprinted papers, their characteristics, and the problem of effecting revisions as necessary for publication. Experience in identifying and acquiring review copies of pertinent books is recounted and qualitative statistics are given relative to the extent of reviewing elsewhere. It is concluded that the normal reviewing process is haphazard and far from comprehensive; one seeking to build a library of excellence in his own field is ill-served by the prevailing pattern of technical book reviews. A system of screening the published and report literature in the area of applied thermal processes is described which leads to a select listing of

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significant items. These, plus the cited references of the original published papers, are key-punched on cards, and a listing of the cards is provided as copy to the printer, in lieu of typing, for a General Bibliography, serially numbered. The punched cards serve as input data for preparation of a KWIC Index of the entire bibliography. Citation Indexing for the original published papers is made possible through editorial identification of cited references already located in the General Bibliography previously published. The punched cards are available to be copied for external documentation research.

#### INTRODUCTION

Publication of a documentation-oriented special technical journal was initiated in January 1964. The journal has a number of unique features based upon the experience of the editor (this author) as a research consultant in industry who has been strongly dependent upon literature retrieval in his work functions. The special technical area of the journal is applied thermal processes, the title is Pyrodynamics, and the publisher is Gordon and Breach Science Publishers, Inc.

#### PAPERS PUBLISHED

Probably the foremost unique feature of the journal operation is the source of papers. It is an objective of the publication to provide a place for worthy papers "squeezed out" of appearance in journals of wide technical coverage by their own specialized nature. The philosophy is to identify existing unprinted papers of some potential interest, e.g., existing

preprints from technical society meetings, and to suggest to the respective authors their possible submission for publication review. These suggestions are made in such language as to absolutely preclude interpretation in the sense of "invited papers", with an obligation for publication. Reviewing is strict as with any high-level technical journal, and seemingly attractive papers have been rejected upon review on the basis of a variety of deficiencies: not technically correct; not an advance over existing knowledge; not sufficiently within the professed subject area of the journal. Others have been recommended for major revision before acceptance: excision of tedious details or of introductory material already published; excision of incomplete experimental data "tacked onto" a basically analytical investigation; inadequate interpretation of test results.

Experience to date has led to the following tentative conclusions:

1. There are worthwhile papers which ought to be published, but which will not be published (because the authors are either insufficiently motivated or insufficiently informed as to possible places of publication) unless someone else enters the picture, such as an editor or a public relations office.

2. There are also papers, apparently lots of them, presented at meetings of major technical societies which are unworthy of such presentation, let alone publication, and the prevailing review practices are often inadequate, and seriously need overhaul to protect the quality of the meetings involved. (However, this may reflect only upon selected technical divisions of a given society, and not all divisions.)

3. In the main, most papers which reach the formal preprinting stage are well enough written so that they either stand or fall on their technical merits. Few technically sound papers require extensive revisions, and the primary requirement of revision is simple excision. (This excision could be dictated by space requirements; in the subject journal it is aimed at eliminating tediously unnecessary material.)

4. The above point leads to formulation of the supposition that lack of a requirement for preprinting leads authors to less careful preparation of papers which are submitted directly as drafts for publication review, in which case the burden of proper organization is thrust upon the referees.

5. In the case of available papers, even minor revisions "come hard". A number of papers which could have been revised by their authors, to meet reviewers' criticisms, have been lost to publication by lack of further action on the part of the authors.

It should be emphasized that the above points are based upon experience with papers which, to a lesser or greater extent, have been "salvaged" for publication. It is suggested that such papers form a different family than those of authors who are persistently eager for publication. This raises the question of the extent to which the present content of technical journals is determined by the persistence of various authors, their readiness to comply with directions for revision, and the like. Between the one extreme of the scientific worker reporting strictly measured physical constants, where personality can scarcely affect the data resulting, and the other extreme of a persistent public relations officer

seeing a paper thru to publication as a job assignment, regardless of the author's feelings, there is room to inquire over relationship between temperament and technical accomplishment. Are there more aggressive and less aggressive approaches to analysis; are there less readily documented analyses which are swifter and better than the more straightforwardly detailed ones which can easily be written up and published? It is suggested that the experience of the subject technical journal has identified an important problem area for documentation research.

Before discussing the other unique features of the new journal, it is appropriate to indicate the sources of the papers which have been published or scheduled to date. These papers have been presented at meetings of the American Society of Mechanical Engineers, the American Institute of Chemical Engineers, the American Institute of Aeronautics and Astronautics and its predecessor, the American Rocket Society, and the Western States Section of The Combustion Institute. All but the A.I.Ch.E. regularly preprint their papers, so that preprints of potential interest can be procured directly from the respective organization, inspected, and contact made with the authors regarding possible publication. Since the A.I.Ch.E. formally preprints only a fraction of its papers, it generally is necessary to write the authors for informal preprints, with the hope that these have been prepared, and proceed from there.

In addition, two translations have been published in the first two volumes, and permission to publish two others has been sought unsuccessfully from the commercial publishers of the original (German) papers.

#### REVIEWS

In much the same way that papers for publication are assiduously identified and assembled, books for review are garnered by prior identification and direct request to their publishers. The identification starts with both publishers' trade announcements (the editor is widely favored with these as a Member of the Special Libraries Association and proprietor of a private special technical library) and book reviews and lists in a multiplicity of serial publications. The objective is to truly evaluate available volumes which are consonant with the particular subject area of the journal, regardless of their obscurity, rather than to direct attention only toward those volumes most widely advertized by the major publishers. Most publishers comply with direct requests for specific works for review, altho a substantial number do not. To date, particular lack of cooperation has been experienced from appeals to a major American distributor of a major English publisher; there seems, however, to be no correlation between kind of response and size of publishing house.

Roughly half of the volumes received for review are not found to be reviewed elsewhere within the extent of the review columns scanned in appropriate serial publications. It is claimed that the scanning of such serial publications is considerably more extensive and thoro than any average reader would experience. Thus identification and evaluation of

pertinent volumes is offered as a distinct service to the reader who would build, or influence the building of, a technical library in the subject area of the journal. The author, many times disappointed after having "bought a book by its cover", submits that diligent coverage of a field, pro and con, is a reasonable responsibility of a journal which engages extensively in book reviews (highly selective reviewing standing as the alternative).

Volumes received for review are offered on check lists to the members of the journal's review board of some twelve to fifteen persons. Responses range from four or five requests for some few volumes thru one's and two's for a larger number of those on the list down to zero response for a substantial fraction. Partly this latter situation reflects a prevailing imbalance of review board composition which has been improving since inauguration of the journal, but has not yet been fully resolved. Partly, also, zero responses reflect the fact that the editor sometimes overreaches reasonable bounds of subject matter in requesting volumes for review.

What of the books which no one wishes to review? These are left to the editor to sort into three stacks: (a) those few he then reviews formally himself, (b) those he reviews in a cursory manner in a column of the journal entitled "The Literature", and (c) those whose contents disclose no alignment with the subject technical area of the journal, and so are discarded. The intermediate treatment may consist of a simple depiction of contents, or may encompass quotations from available

reviews. It was stated earlier that for only about half of the volumes received for review are published reviews discovered in pertinent serial publications. In two years of experience in compilation, no more than five reviews of the same work have ever been identified. The norm is somewhere between one and two. As probably would be expected, comparative reviews range from good agreement (usually favorable treatment) all the way to downright disagreement. In the latter sort of case, the disparity usually arises because the less informed reviewer is impressed, while the more expert one blasts away at an inferior work. All in all, it is concluded that the normal book reviewing process is haphazard in its comprehensiveness, and one seeking to build a library of excellence in his own field is ill-served by the prevailing pattern of technical book reviews.

In addition to books, the journal is favored with response to requests, for review copies of items in the report literature, to the Clearinghouse for Federal Scientific and Technical Information. Again, lists of available items are circulated to the members of the review board. Here, the philosophy is to review briefly, critically, and favorably; i.e., inferior items are dropped, and the available space is devoted to outstanding ones. Included in this treatment may be selected society pre-prints and papers published in obscure journals, if of particular significance and value. The editor's column, "The Literature", referred to earlier, serves as a place of notation of specialized information sources and down-to-earth developments in documentation of immediate interest to the scientific worker. This column is modeled after that of the librarian of the Royal Aeronautical Society, Mr. Frank H. Smith's "On the Shelf", which appears

weekly in Engineering. Again, there is an effort to provide comprehensive, rather than incidental, treatment.

#### BIBLIOGRAPHY

The subject journal was envisioned for a number of years before it came into being. Equal in importance to the idea of publication of worthy papers which would not otherwise be published was the idea of a screened compilation of pertinent bibliography. The editor for years has compiled his private records of papers and reports for retrieval, representing work which he felt ought to be shared. After much experimentation he had concluded that it is equally important to establish the significance of an item, as to explicitly catalog it. While feeling it very important to survey and be able to retrieve the report literature, he also felt that much in both fields is not sufficiently significant to be worthy of retrieval, especially for particular purposes. Certainly there is no minimizing the importance of Chemical Abstracts as definitive history, but any steady user of C.A. knows that a substantial fraction of what he turns up under a subject index is not going to help him.

The editor was influenced in developing the pattern for the subject journal by the developing use of the KWIC Index and by the work of Kessler\* in tying papers together via their identity of references. Finally, he was impressed with the suggestion (for which the initially-noted reference has unfortunately been lost) that the compilation of significant literature in a particular subject area should be performed by those intimately engaged in that particular area. This lost suggestion

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\*Work by M. M. Kessler at Lincoln Laboratory, Massachusetts Institute of Technology, 1961-1962, reported in AD278226, AD278831, AD282697, AD282803, AD286253, AD293251.

implied, if memory serves, a constant refinement of what would amount to a monographic work in any given technical area by continuous correspondence among the scientists in the area. This ideal may be contrasted to the practice of the Aeronautical Engineering Review and the ARS Journal, in the days before AIAA, of virtually indiscriminately listing under broad subject areas whatever papers and reports chanced to come to the attention of the compilers.

The subject journal endeavors to cover a middle ground, as follows: Via direct subscription, Currents Contents, International Aerospace Abstracts, Scientific and Technical Aerospace Reports, Monthly Catalog of U.S. Government Publications, U.S. Government Research & Development Reports, Applied Mechanics Reviews, and Fire Research Abstracts and Reviews, the editor identifies, assembles, inspects, and evaluates the significance of papers and reports related to the subject technical area of the journal. He sorts the significant ones into broad subject fields: thermal processes, related materials properties, chemical reactions, analytical techniques, and experimental aspects. These references are periodically sorted out chronologically and listed, as by Xerox duplication, onto whole pages, of individual reference cards. All of the above is a normal peripheral function of his employment as a research consultant in industry. For the subject journal, copies of these lists are circulated to five members of the review board, for check-off as to interest and presumed importance. This check-off relies upon the descriptiveness of the titles; so too, of course, does the KWIC Index. A consensus of responses dictates primarily which items are to be listed in the General Bibliography of the

journal where they appear in chronological blocks of numbers according to the broad subject fields employed. Occasionally the editor will have prejudged, by appendage of an asterisk to the original reference card to denote an item of outstanding significance.

The selected items are key-punched onto computer input cards, along with serially assigned identification numbers, with the intent that the numbering sequence build up ad infinitum for permanent recall. Not as a pun, but as a specific identifying symbol, the phonetic equivalents of the first two syllables of the journal's name, the Greek letters pi and rho, are prefixed to these numbers in the journal listing, altho not, of course, in the card-punching. A simple listing of the cards provides the copy for the printer of the entries for the General Bibliography. Accounting for mistakes in either typing or key-punching, preparation of the cards is at least as simple as typing would be, particularly since a very simple, non-KWIC format is employed. A simple computer program converts the key-punched data to KWIC format, so that the KWIC Index of General Bibliography entries can be prepared without further human effort. The KWIC Index to the first volume is now in process of publication, and for the second volume it is about to be generated as the final typesetting of this volume is accomplished.

Not only is the General Bibliography composed of this outgrowth of the editor's own effort at literature review and evaluation. Each book and report reviewed, and each cited reference of the papers published in the journal, represents another numbered entry in the General Bibliography. Keppler showed that only a small fraction of published papers are subsequently cited in other published papers. A corollary could be that a paper which is

subsequently cited is outstanding enough in its significance to rank highly in its subject area, and be worthy of incorporation in a select listing of items for retrieval. At least, this supposition has been made. There are some few obvious overlappings beyond the strict subject area of the journal which result as a consequence, but these are few enough to be excused in pursuing a policy of censoring nothing of such origination.

Where a cited reference has already appeared in the General Bibliography, the original serial number is identified; duplicate listing is not made. This procedure involves some extra editorial effort, but with the KWIC Index this is not excessive. Thus papers tied together by identical references can be identified, and from the very first issue of the journal. The punched cards are in storage for whatever future indexing or documentation research may be desired, and copies could be supplied at cost in support of research by others.

In two volumes, over 2500 references have been listed in the General Bibliography. Of those deriving directly from the editor's personal survey of the literature, about half represent books and published papers (chiefly papers) and about half represent reports. (When a report is later published as a paper, the practice is to re-list it.) Important general references are still being picked up and listed from the early 1960's; these represent a rather arbitrary sort of backlog accepted for the journal. The 2500-odd references will have appeared in a year and a half. Probably the quantity of listings will level off somewhere between 1000 and 1500 per year as the journal goes on a bimonthly basis of publication.

It is obvious that documentation studies of various sorts could be made with the developing body of bibliography, in the area of applied thermal processes, being produced as an adjunct to the publication of this special technical journal. This is believed to be the first example of a technical journal itself incorporating both KWIC Indexing and the elements of Citation Indexing.